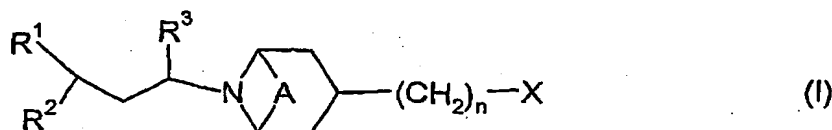


CLAIMS

1. A compound of formula (I):



5 wherein:

A is absent or is $(CH_2)_2$;

R^1 is $C(O)NR^{10}R^{11}$, $C(O)_2R^{12}$, $NR^{13}C(O)R^{14}$, $NR^{15}C(O)NR^{16}R^{17}$, $NR^{18}C(O)_2R^{19}$, heterocyclyl (for example piperidine, piperazine, pyrrolidine or azetidine), aryl, cycloalkyl or heteroaryl;

10 R^{10} , R^{13} , R^{15} , R^{16} and R^{18} are hydrogen or C_{1-6} alkyl;

R^{11} , R^{12} , R^{14} , R^{17} and R^{19} are C_{1-8} alkyl (optionally substituted by halo, hydroxy, C_{1-6} alkoxy, C_{1-6} haloalkoxy, C_{3-6} cycloalkyl (optionally substituted by halo), C_{5-6} cycloalkenyl, $S(C_{1-4}$ alkyl), $S(O)(C_{1-4}$ alkyl), $S(O)_2(C_{1-4}$ alkyl), heteroaryl, aryl, heteroaryloxy or aryloxy), aryl, heteroaryl, C_{3-7} cycloalkyl (optionally substituted by halo or C_{1-4} alkyl), C_{4-7} cycloalkyl fused to a phenyl ring, C_{5-7} cycloalkenyl, or, heterocyclyl (itself optionally substituted by oxo, $C(O)(C_{1-6}$ alkyl), $S(O)_k(C_{1-6}$ alkyl), halo or C_{1-4} alkyl); or R^{11} , R^{12} , R^{14} and R^{17} can also be hydrogen;

15 or R^{10} and R^{11} , and/or R^{16} and R^{17} may join to form a 4-, 5- or 6-membered ring which optionally includes a nitrogen, oxygen or sulphur atom, said ring being optionally substituted by C_{1-6} alkyl, $S(O)_l(C_{1-6}$ alkyl) or $C(O)(C_{1-6}$ alkyl);

R^2 is phenyl, heteroaryl or C_{3-7} cycloalkyl;

R^3 is H or C_{1-4} alkyl;

X is $S(O)_2NR^4R^5$ or $NR^6S(O)_2R^7$;

R^7 is aryl, heteroaryl, C_{1-6} alkyl, C_{3-7} cycloalkyl, heterocyclyl or NR^8R^9 wherein NR^8R^9 can be cyclized to form a 4-, 5- or 6-membered ring which optionally includes a nitrogen, oxygen or sulphur atom, said ring being optionally substituted by C_{1-6} alkyl, $S(O)_p(C_{1-6}$ alkyl) or $C(O)(C_{1-6}$ alkyl);

25 R^4 and R^8 are aryl, heteroaryl, C_{1-6} alkyl (optionally substituted by hydroxy or C_{1-6} alkoxy), C_{3-7} cycloalkyl or heterocyclyl;

30 R^5 , R^6 and R^9 are, independently, hydrogen or C_{1-6} alkyl;

n is 1, 2 or 3;

aryl, phenyl and heteroaryl moieties are independently optionally substituted by one or more of halo, cyano, nitro, hydroxy, $\text{OC(O)NR}^{20}\text{R}^{21}$, $\text{NR}^{22}\text{R}^{23}$, $\text{NR}^{24}\text{C(O)R}^{25}$, $\text{NR}^{26}\text{C(O)NR}^{27}\text{R}^{28}$, $\text{S(O)}_2\text{NR}^{29}\text{R}^{30}$, $\text{NR}^{31}\text{S(O)}_2\text{R}^{32}$, $\text{C(O)NR}^{33}\text{R}^{34}$, CO_2R^{36} , $\text{NR}^{37}\text{CO}_2\text{R}^{38}$, $\text{S(O)}_q\text{R}^{39}$, $\text{OS(O)}_2\text{R}^{49}$, C_{1-6} alkyl (optionally mono-substituted by $\text{S(O)}_2\text{R}^{50}$ or $\text{C(O)NR}^{51}\text{R}^{52}$), C_{2-6} alkenyl, C_{2-6} alkynyl, C_{3-10} cycloalkyl, C_{1-6} haloalkyl, C_{1-6} alkoxy(C_{1-6})alkyl, C_{1-6} alkoxy, C_{1-6} haloalkoxy, phenyl, phenyl(C_{1-4})alkyl, phenoxy, phenylthio, phenylS(O), phenylS(O)₂, phenyl(C_{1-4})alkoxy, heteroaryl, heteroaryl(C_{1-4})alkyl, heteroaryloxy or heteroaryl(C_{1-4})alkoxy; wherein any of the immediately foregoing phenyl and heteroaryl moieties are optionally substituted with halo, hydroxy, nitro, S(C_{1-4} alkyl), S(O)(C_{1-4} alkyl), S(O)₂(C_{1-4} alkyl), S(O)₂NH₂, S(O)₂NH(C_{1-4} alkyl), S(O)₂N(C_{1-4} alkyl)₂, cyano, C_{1-4} alkyl, C_{1-4} alkoxy, C(O)NH₂, C(O)NH(C_{1-4} alkyl), C(O)N(C_{1-4} alkyl)₂, CO₂H, CO₂(C_{1-4} alkyl), NHC(O)(C_{1-4} alkyl), NHS(O)₂(C_{1-4} alkyl), CF₃ or OCF₃;

unless otherwise stated heterocyclyl is optionally substituted by C_{1-6} alkyl [optionally substituted by phenyl {which itself optionally substituted by halo, C_{1-4} alkyl, C_{1-4} alkoxy, cyano, nitro, CF₃, OCF₃, (C_{1-4} alkyl)C(O)NH, S(O)₂NH₂, C_{1-4} alkylthio, S(O)(C_{1-4} alkyl) or S(O)₂(C_{1-4} alkyl)} or heteroaryl {which itself optionally substituted by halo, C_{1-4} alkyl, C_{1-4} alkoxy, cyano, nitro, CF₃, (C_{1-4} alkyl)C(O)NH, S(O)₂NH₂, C_{1-4} alkylthio, S(O)(C_{1-4} alkyl) or S(O)₂(C_{1-4} alkyl)}], phenyl {optionally substituted by halo, C_{1-4} alkyl, C_{1-4} alkoxy, cyano, nitro, CF₃, OCF₃, (C_{1-4} alkyl)C(O)NH, S(O)₂NH₂, C_{1-4} alkylthio, S(O)(C_{1-4} alkyl) or S(O)₂(C_{1-4} alkyl)}, heteroaryl {optionally substituted by halo, C_{1-4} alkyl, C_{1-4} alkoxy, cyano, nitro, CF₃, (C_{1-4} alkyl)C(O)NH, S(O)₂NH₂, C_{1-4} alkylthio, S(O)(C_{1-4} alkyl) or S(O)₂(C_{1-4} alkyl)}, S(O)₂NR⁴⁰R⁴¹, C(O)R⁴², C(O)₂(C_{1-6} alkyl) (such as tert-butoxycarbonyl), C(O)₂(phenyl(C_{1-2} alkyl)) (such as benzyloxycarbonyl), C(O)NHR⁴³, S(O)₂R⁴⁴, NHS(O)₂NHR⁴⁵, NHC(O)R⁴⁶, NHC(O)NHR⁴⁷ or NHS(O)₂R⁴⁸, provided none of these last four substituents is linked to a ring nitrogen;

k, l, p and q are, independently, 0, 1 or 2;

R²⁰, R²², R²⁴, R²⁶, R²⁷, R²⁹, R³¹, R³³, R³⁷, R⁴⁰ and R⁵¹ are, independently, hydrogen or C_{1-6} alkyl;

R²¹, R²³, R²⁵, R²⁸, R³⁰, R³², R³⁴, R³⁶, R³⁸, R³⁹, R⁴¹, R⁴², R⁴³, R⁴⁴, R⁴⁵, R⁴⁶, R⁴⁷, R⁴⁸,

R⁴⁹, R⁵⁰ and R⁵² are, independently, C_{1-6} alkyl (optionally substituted by halo, hydroxy,

C₁₋₆ alkoxy, C₁₋₆ haloalkoxy, C₃₋₆ cycloalkyl, C₅₋₆ cycloalkenyl, S(C₁₋₄ alkyl), S(O)(C₁₋₄ alkyl), S(O)₂(C₁₋₄ alkyl), heteroaryl, phenyl, heteroaryloxy or phenyloxy), C₃₋₇ cycloalkyl, phenyl or heteroaryl; wherein any of the immediately foregoing phenyl and heteroaryl moieties are optionally substituted with halo, hydroxy, nitro, S(C₁₋₄ alkyl), S(O)(C₁₋₄ alkyl), S(O)₂(C₁₋₄ alkyl), S(O)₂NH₂, S(O)₂NH(C₁₋₄ alkyl), S(O)₂N(C₁₋₄ alkyl)₂, cyano, C₁₋₄ alkyl, C₁₋₄ alkoxy, C(O)NH₂, C(O)NH(C₁₋₄ alkyl), C(O)N(C₁₋₄ alkyl)₂, CO₂H, CO₂(C₁₋₄ alkyl), NHC(O)(C₁₋₄ alkyl), NHS(O)₂(C₁₋₄ alkyl), C(O)(C₁₋₄ alkyl), CF₃ or OCF₃;

R²¹, R²³, R²⁵, R²⁸, R³⁰, R³⁴, R³⁵, R³⁶, R⁴¹, R⁴², R⁴³, R⁴⁵, R⁴⁶, R⁴⁷ and R⁵² may additionally be hydrogen;

or a pharmaceutically acceptable salt thereof or a solvate thereof.

2. A compound as claimed in claim 1 wherein A is absent.

3. A compound as claimed in claim 1 or 2 wherein n is 1 or 2.

4. A compound as claimed in claim 1, 2 or 3 wherein R³ is hydrogen.

5. A compound as claimed in claim 1, 2, 3 or 4 wherein R¹ is NR¹³C(O)R¹⁴; wherein R¹³ and R¹⁴ are as defined in claim 1.

6. A compound as claimed in claim 1, 2, 3 or 4 wherein R¹ is optionally substituted aryl or optionally substituted heteroaryl, wherein the optional substituents are as recited in claim 1.

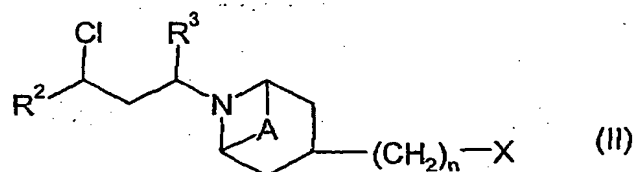
7. A compound as claimed in claim 1, 2, 3 or 4 wherein R¹ is optionally substituted heterocyclyl.

8. A compound as claimed in any one of the preceding claims wherein R² is phenyl optionally substituted by halo or CF₃.

9. A compound as claimed in any one of the preceding claims wherein X is NR⁶S(O)₂R⁷; wherein R⁶ and R⁷ are as defined in claim 1.

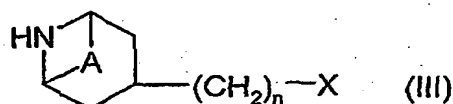
10. A compound as claimed in any one of the preceding claims wherein X is $S(O)_2NR^4R^5$; wherein R^4 and R^5 are as defined in claim 1.

- 5 11. A process for preparing a compound as claimed in claim 1, the process comprising:
- a. when R¹ is an N-linked optionally substituted heterocycle, reacting a compound of formula (II):

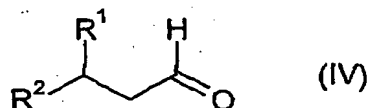


wherein R^2 , R^3 , n , A and X are as defined in claim 1, with a compound R^1H (wherein the H is on a heterocycle ring nitrogen atom) wherein R^1 is as defined above, in the presence of a suitable base, in a suitable solvent and optionally in the presence of sodium iodide;

- b. when R^3 is hydrogen, coupling a compound of formula (III):

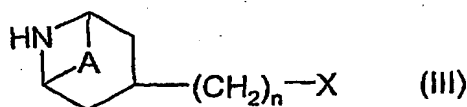


wherein n, A and X are as defined in claim 1, with a compound of formula (IV):

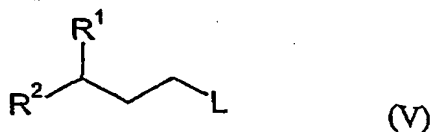


wherein R¹ and R² are as defined in claim 1, in the presence of NaBH(OAc)₃ in a suitable solvent at room temperature;

- c. when R³ is hydrogen, coupling a compound of formula (III):

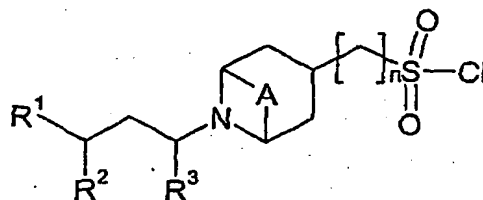


wherein n, A and X are as defined in claim 1, with a compound of formula (V):



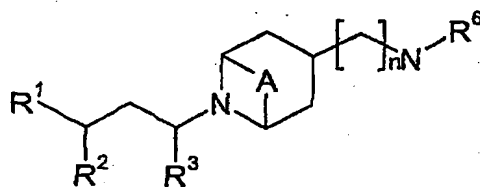
wherein R^1 and R^2 are as defined in claim 1 and L is a leaving group; in the presence of a base, in a suitable solvent at a temperature from 60°C up to the boiling point of the solvent;

- d. when X is $S(O)_2NR^4R^5$, reacting a compound:



wherein R^1 , R^2 , R^3 , A and n are as defined in claim 1, with NHR^4R^5 , wherein R^4 and R^5 are as defined in claim 1, in the presence of a suitable base and in the presence of a suitable solvent; or,

- e. when X is $NR^6S(O)_2NR^7$, reacting a compound:



wherein R^1 , R^2 , R^3 , A and n are as defined in claim 1, with $R^7S(O)_2Cl$, in the presence of a suitable base and in the presence of a suitable solvent.

12. A pharmaceutical composition which comprises a compound as claimed in claim 1, or a pharmaceutically acceptable salt thereof or solvate thereof, and a pharmaceutically acceptable adjuvant, diluent or carrier.
13. A compound as claimed in claim 1, or a pharmaceutically acceptable salt thereof or solvate thereof, for use as a medicament.
14. A compound as claimed in claim 1, or a pharmaceutically acceptable salt thereof or solvate thereof, in the manufacture of a medicament for use in therapy.
15. A method of treating a CCR5 mediated disease state comprising administering to a patient in need of such treatment an effective amount of a compound as claimed in claim 1, or a pharmaceutically acceptable salt thereof or solvate thereof.